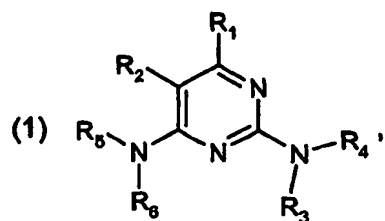


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What is claimed is:

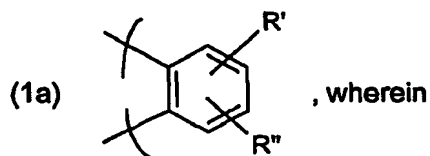
1. Use of a 2,4-bis(alkylamino)pyrimidine of formula



5 wherein

R₁ is C₁-C₁₂alkyl or C₆-C₁₀aryl;

R₂ is hydrogen or C₁-C₁₂alkyl; or R₁ and R₂ together form a radical of formula



R' and R'' are each independently of the other hydrogen, C₁-C₆alkyl or C₁-C₆alkoxy;

10 R₃ and R₅ are each independently of the other hydrogen or C₁-C₈alkyl;

R₄ is C₁-C₂₀alkyl, unsubstituted phenyl, C₆-C₁₀aryl, C₆-C₁₀aryl-C₁-C₆alkyl, hydroxy-C₁-C₆alkyl, di-C₁-C₆alkylamino-C₁-C₆alkyl, mono-C₁-C₆alkylamino-C₁-C₆alkyl, -(CH₂)₂-(O-(CH₂)₂)₁₋₄-OH or -(CH₂)₂-(O-(CH₂)₂)₁₋₄-NH₂;

R₆ is C₁-C₂₀alkyl, C₆-C₁₀aryl, C₆-C₁₀aryl-C₁-C₆alkyl, hydroxy-C₁-C₆alkyl,

15 di-C₁-C₆alkylamino-C₁-C₆alkyl, mono-C₁-C₆alkylamino-C₁-C₆alkyl,

-(CH₂)₂-(O-(CH₂)₂)₁₋₄-OH or -(CH₂)₂-(O-(CH₂)₂)₁₋₄-NH₂; or

R₃ and R₄ and/or R₅ and R₆ together form a pyrrolidine, piperidine, hexamethyleneimine or morpholine ring;

in the antimicrobial treatment of surfaces.

20

2. Use according to claim 1, wherein

R₁ is C₁-C₈alkyl or phenyl.

3. Use according to claims 1 or 2, wherein

25 R₂ is hydrogen or C₃-C₈alkyl.

4. Use according to any one of the preceding claims, wherein

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R_3 and R_5 are each independently of the other hydrogen or C_1 - C_8 alkyl.

5. Use according to any one of the preceding claims, wherein

R_4 is C_1 - C_{12} alkyl, unsubstituted phenyl, C_6 - C_{10} aryl- C_1 - C_8 alkyl,

5 hydroxy- C_2 - C_8 alkyl, di- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, mono- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-OH$ or $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-NH_2$; and

R_6 is C_1 - C_{12} alkyl, C_6 - C_{10} aryl, C_6 - C_{10} aryl- C_1 - C_8 alkyl, hydroxy- C_2 - C_8 alkyl, di- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, mono- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-OH$ or $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-NH_2$.

10

6. Use according to any one of the preceding claims, wherein

R_1 is C_1 - C_8 alkyl or phenyl;

R_2 is hydrogen or hexyl; and

R_3 and R_5 are each independently of the other hydrogen or C_1 - C_8 alkyl;

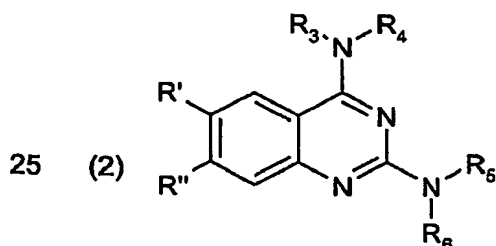
15 R_4 is C_1 - C_{12} alkyl, unsubstituted phenyl, C_6 - C_{10} aryl- C_1 - C_8 alkyl, hydroxy- C_2 - C_8 alkyl, di- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, mono- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-OH$ or $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-NH_2$; and

R_6 is C_1 - C_{12} alkyl, C_6 - C_{10} aryl, C_6 - C_{10} aryl- C_1 - C_8 alkyl, hydroxy- C_2 - C_8 alkyl, di- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, mono- C_1 - C_4 alkylamino- C_1 - C_4 alkyl,

20 $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-OH$ or $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-NH_2$; or

R_3 and R_4 and/or R_5 and R_6 together form a pyrrolidine, piperidine, hexamethyleneimine or morpholine ring.

7. Use according to claims 1 to 6, relating to compounds of formula



wherein

R' is hydrogen, C_1 - C_3 alkyl or C_1 - C_3 alkoxy;

R'' is C_1 - C_3 alkyl or C_1 - C_3 alkoxy;

R_3 and R_5 are each independently of the other hydrogen or C_1 - C_8 alkyl; and

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R_4 and R_8 are each independently of the other C_1 - C_{12} alkyl, phenyl- C_1 - C_3 alkyl, hydroxy- C_1 - C_6 -alkyl, or di- C_1 - C_6 alkylamino- C_1 - C_6 alkyl, mono- C_1 - C_6 alkylamino- C_1 - C_6 alkyl, $-(CH_2)_2-(O-(CH_2)_2)_{1-4}-OH$ or $-(CH_2)_2-(O-(CH_2)_2)_{1-4}-NH_2$; or

5 R_3 and R_4 and/or R_5 and R_6 together form a pyrrolidine, piperidine, hexamethyleneimine or morpholine ring.

8. Use according to any one of claims 1 to 7, wherein

R_1 is C_1 - C_4 alkyl or phenyl;

10 R_2 is hydrogen or hexyl; or R_1 and R_2 together form a radical of formula (1a) as defined in claim 1, wherein

R' is hydrogen, C_1 - C_3 alkyl or C_1 - C_3 alkoxy, and

R'' is C_1 - C_3 alkyl or C_1 - C_3 alkoxy;

R_3 and R_5 are each independently of the other hydrogen or C_1 - C_8 alkyl;

15 R_4 is C_1 - C_{12} alkyl, unsubstituted phenyl, C_6 - C_{10} aryl- C_1 - C_6 alkyl, hydroxy- C_2 - C_6 alkyl, di- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, mono- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-OH$ or $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-NH_2$; and

R_6 is C_1 - C_{12} alkyl, C_6 - C_{10} aryl, C_6 - C_{10} aryl- C_1 - C_6 alkyl, hydroxy- C_2 - C_6 alkyl, di- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, mono- C_1 - C_4 alkylamino- C_1 - C_4 alkyl, $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-OH$ or $-(CH_2)_2-(O-(CH_2)_2)_{1,2}-NH_2$; or

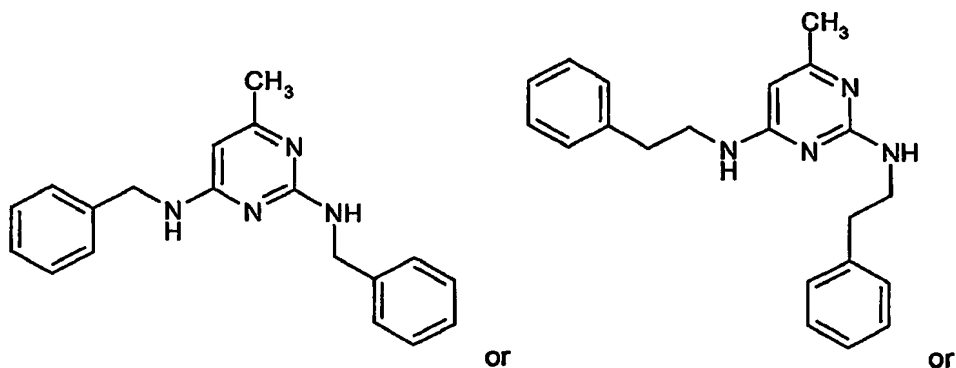
20 R_3 and R_4 together, and R_5 and R_6 together, form a pyrrolidine, piperidine, hexamethyleneimine or morpholine ring.

9. Use according to any one of claims 1 to 8, wherein

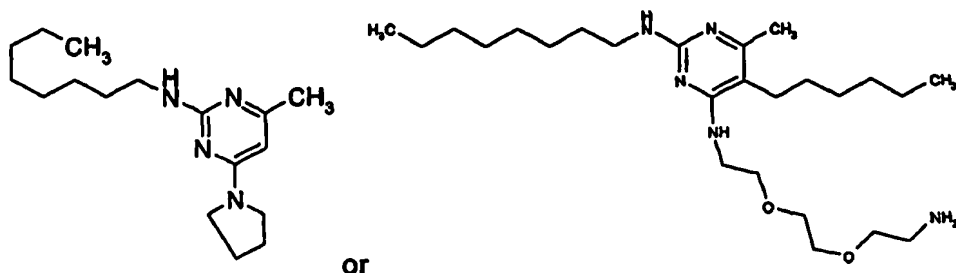
R_3 and R_5 , and R_4 and R_6 , have the same meanings.

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10. Use of a 2,4-bis(alkylamino)pyrimidine according to any one of claims 1 to 7 of formula



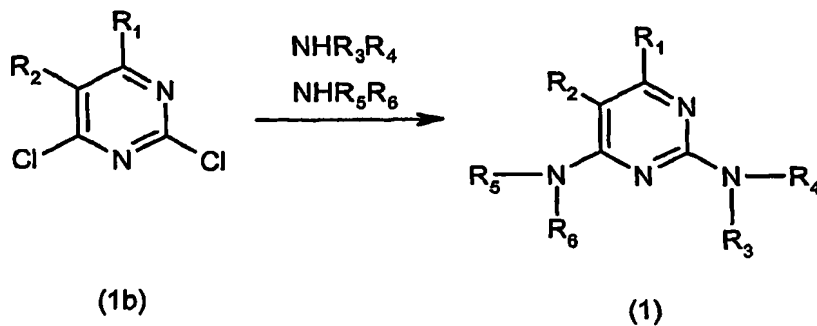
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11. A process for the preparation of a compound of formula (1), which comprises reacting a dichloropyrimidine compound of formula (1b), wherein R_1 and R_2 are as defined above in claim 1, with a primary or secondary amine, wherein R_3 , R_4 , R_5 and R_6 are as defined above in claim 1, in a suitable solvent and an auxiliary base or using an excess of amine to form a compound of formula (1) according to the following Scheme:

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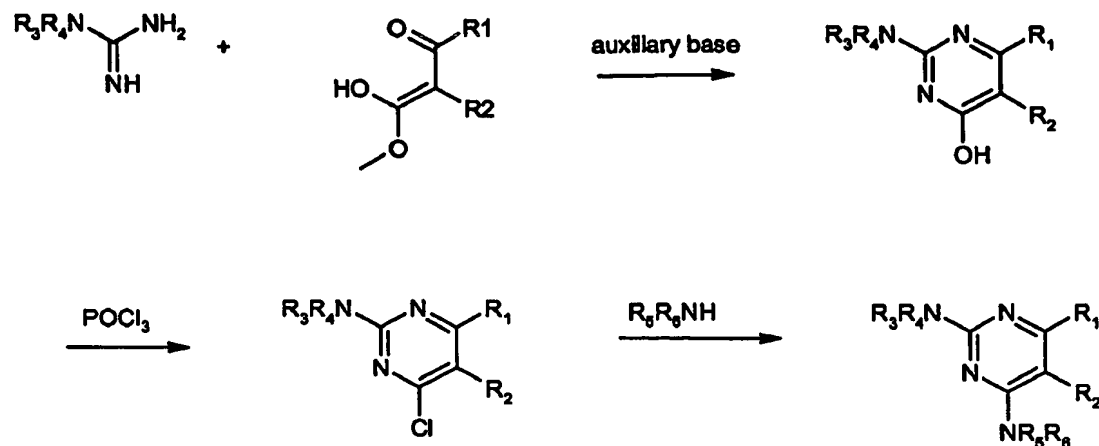


or

a process for the preparation of a compound of formula (1), which comprises condensing a guanidine compound with a suitable β -keto ester using an auxiliary base in the presence of a solvent and then reacting with phosphorus oxychloride, and then with a primary or secondary amine (R_4R_5NH) according to Scheme (II) :

15

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wherein R_1 and R_2 , R_3 , R_4 , R_5 and R_6 are as defined above in claim 1.

- 5 12. Use of a compound of formula (1) according to claim 1 in the treatment of textile fibre materials.
13. Use of a compound of formula (1) according to claim 1 in preservation.
- 10 14. Use of a compound of formula (1) according to claim 1 in washing and cleaning formulations.
- 15 15. Use of a compound of formula (1) according to claim 1 in imparting antimicrobial properties to, and preserving, plastics, paper, nonwovens, wood or leather.
16. Use of a compound of formula (1) according to claim 1 in imparting antimicrobial properties to, and preserving, technical products, especially printing ink thickeners consisting of starch or of cellulose derivatives, surface-coating compositions and paints.
- 20 17. Use of a compound of formula (1) as a biocide in technical processes.
18. Use of a compound of formula (1) as a skin-care preparation or mouth-care preparation.
19. A personal care preparation containing

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from 0.01 to 15 % by weight, based on the total weight of the composition, of a compound of formula (1) and cosmetically tolerable adjuvants.

20. An oral composition containing from 0.01 to 15 % by weight, based on the total weight of
5 the composition, of a compound of formula (1) and orally tolerable adjuvants.

21. A skin-care preparation containing from 0.01 to 15 % by weight, based on the total weight of the composition, of a compound of formula (1) and adjuvants tolerated by the skin.